

EXHIBIT 19



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Safety Overview

A laboratory environment, by definition, contains a substantial number of materials, processes, and equipment that represent potential hazards to health and safety. The multidisciplinary nature of the research conducted at the LLE facility makes it extremely important that each and every person working with hazardous materials, equipment, and processes be fully aware of the inherent risks and hazards associated with the conditions of his or her experiment, particularly when the experimental protocol involves hazards that fall outside their area of previous training and expertise. In such a situation, lack of attention to safety issues, whether due to indifference, lack of information, excessive haste, improper or unsafe experimental design or protocol, or faulty equipment, can have dire consequences.

The principal hazards that can be found in the laboratory work environment include

Physical hazards - Lasers, magnetic fields, ionizing radiation (UV, gamma radiation, x-rays), microwave radiation, ultrasound, noise, and apparatus under pressure or vacuum

Chemical hazards - Materials that are flammable, combustible, toxic, carcinogenic, teratogenic (cause birth defects), oxidizers, reactive, or corrosive

Radiation hazards - Direct radiation produced from radiation producing device/experiments, eg. x-ray generators, OMEGA & MTW experiments and radioactive isotopes used in experimental activities.

Fire hazards - Flammable and combustible materials

Electrical hazards - Sources of high voltage, current, or situations where electrical discharge could occur

Safe Working Environment

Ensuring a safe working environment at the LLE facility is a responsibility shared by all of its faculty, staff, and students.

View our [Safety Philosophy](#).

Several areas of responsibility include the following:

- **The University's and LLE's responsibilities** include providing and maintaining a safe working environment, establishing safety guidelines and protocols, and monitoring to ensure regulatory compliance and employee safety.
- **The Safety Officers** are responsible for providing training and support and guidance in safety-related issues for their specific areas of expertise (chemical, electrical, fire, laser, radiation), identifying potential hazards, and ensuring compliance with safety regulations and directives through periodic inspection of work areas and implementation and review of new and existing LLE safety directives and instructions.
- **Principal Investigators (PI 's)** are responsible for ensuring that supervised personnel receive specific information and training on hazardous materials, lasers and other equipment with which they work and verifying that appropriate personal protective equipment (PPE) is worn for all experimental activities. The P. I. is also expected to enforce the adoption of safe work practices in his or her work area.
- **Laboratory staff and students** are responsible for completing required safety training and knowing the potential hazards of materials and equipment before beginning experiments, following established safety protocols, using appropriate PPE to minimize exposure and reduce risk, and identifying and reporting potentially hazardous situations to their supervisor or the relevant safety officer.

LLE Chief Safety Officer: **Douglas Jacobs-Perkins**

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